Stonestreet Green Solar

Environmental Statement
Volume 4: Appendices
Chapter 9: Biodiversity
Appendix 9.3: Arboricultural Impact Assessment

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EPL 001 LTD

STONESTREET GREEN SOLAR

ENVIRONMENTAL STATEMENT, VOLUME 4, APPENDIX 9.3: ARBORICULTURAL IMPACT ASSESSMENT

JULY 2024

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EPL 001 LTD

STONESTREET GREEN SOLAR

ARBORICULTURAL IMPACT ASSESSMENT

JULY 2024

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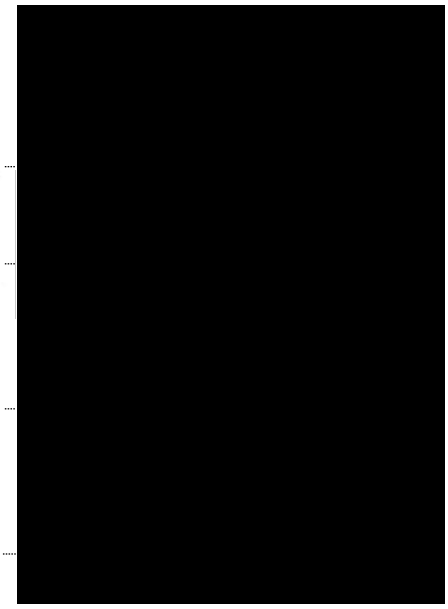


CONTENTS

APPENDICES

DRAWINGS	TITLE	SCALE
GM12014-010 APFP CODE 5(2)(o)	Vegetation Protection and Removal Plan Site Overview	1:5000@A0
GM12014 – 011 APFP CODE 5(2)(o)	Vegetation Protection and Removal Plan Sheets 1-8	1:1000@A0
GM12014 – 074	Vegetation Protection and Removal Plan – Sellindge Substation	1:250@A0

1 INTRODUCTION

1.1 Introduction

1.1.1 This Arboricultural Impact Assessment ('AIA') has been prepared on behalf EPL 001 Ltd (the 'Applicant') to report on a British Standard BS 5837:2012 *Trees in relation to design, demolition and construction – Recommendations* ('BS 5837')[1] tree survey undertaken by Wardell Armstrong ('WA') in relation to the Development Consent Order ('DCO') application for Stonestreet Green Solar ('the Project').

1.2 The Project

1.2.1 The Project comprises the construction, operation, maintenance, and decommissioning of solar photovoltaic ('PV') arrays and energy storage, together with associated infrastructure and an underground cable connection to the existing National Grid Sellindge Substation.

1.2.2 The Project will include a generating station (incorporating solar arrays) with a total capacity exceeding 50 megawatts ('MW'). The agreed grid connection for the Project will allow the export and import of up to 99.9 MW of electricity to the grid. The Project will connect to the existing National Grid Sellindge Substation via a new 132 kilovolt ('kV') substation constructed as part of the Project and cable connection under the Network Rail and High Speed 1 ('HS1') railway.

1.2.3 The location of the Project is shown on **ES Volume 3, Figure 1.1: Site Location Plan (Doc Ref. 5.3).** The Project will be located within the Order limits (the land shown on the **Works Plans (Doc Ref. 2.3)** within which the Project can be carried out). The Order limits plan is provided as **ES Volume 3, Figure 1.2: Order Limits (Doc Ref. 5.3).** Land within the Order limits is known as the 'Site'.

1.3 Brief and Assessment Process

1.3.1 The purpose of this report is to provide an AIA in order to evaluate the direct and indirect effects of the Project illustrative layout design on the trees and hedgerows surveyed. These include trees and hedgerows identified within the Site, as well as those located off-Site but within influencing distance of the Site (usually up to 15m but may be more for ancient and veteran trees). Where there are potential impacts from the Project, this report recommends, where feasible, mitigation measures to be taken to ensure that important trees and hedgerows are adequately considered during the design and construction, and decommissioning processes. Where trees and hedgerows are required to be

removed to enable the Project, potential mitigation measures are proposed, where feasible.

1.3.2 The BS 5837 tree survey was undertaken by Alan Reid, Principal Arboriculturist with WA between 21st February 2022 and 17th March 2022. This was followed by surveys on the 28th and 29th November 2023 and 9th and 10th January 2024 to survey areas not previously within the Order limits. These surveys, in combination with the **Illustrative Project Layout (Book 2: Illustrative Project Drawings - Not for Approval (Doc Ref. 2.5)), Works Plans (Doc Ref. 2.3)** and liaison with the design team, form the basis of this assessment.

1.3.3 An Arboricultural Method Statement ('ArbMS') will detail the final tree protective measures to be implemented during construction and decommissioning of the Project. The inclusion of aN ArbMS is secured via the **Outline Construction Environmental Management Plan ('Outline CEMP') (Doc Ref. 7.8)** and **Outline Decommissioning Environmental Management Plan ('Outline DEMP') (Doc Ref. 7.12)**. The Requirements of the **Draft Development Consent Order (Doc Ref. 3.1)** secure that a CEMP for each phase of the authorised development must be in accordance with the Outline CEMP and that a DEMP for any part of the authorised development must be in accordance with the Outline DEMP. The ArbMS would set out the specifications and methodologies for the implementation of tree protection measures and would also provide a methodology for any proposed works that either encroach within the Root Protection Areas ('RPAs') of retained trees and/ or that have the potential to result in loss or damage to those trees.

1.3.4 The **Outline Landscape and Ecological Management Plan ('Outline LEMP') (Doc Ref. 7.10)** provides details of the overarching principles for minimising, managing and / or mitigating and enhancing the environmental effects of the Project.

1.3.5 The total extent of hedgerow removal is limited to 150m across the Site, secured in the **Design Principles (Doc Ref. 7.5)**.

1.3.6 This AIA report and attached **Drawings (Appendix 9)** accord with the methodologies and guidance set out in BS 5837.

1.4 Site Context

1.4.1 The Site of the Project is located approximately 6.5km to the south-east of Ashford Town Centre and approximately 13.7km to the west of Folkestone Town Centre, in the county of Kent. The Site is situated on land located to the

north and west of the village of Aldington, centred at Ordnance Survey ('OS') National Grid Reference ('NGR') TR 05898 37766.

1.4.2 The Site lies within the administrative areas of Ashford Borough Council ('ABC') and Kent County Council ('KCC').

1.4.3 The predominant surrounding land use in all directions is agriculture.

1.4.4 The location of the Project is shown on **ES Volume 3, Figure 1.1: Site Location Plan (Doc Ref. 5.3).** The Project will be located within the Order limits (the land shown on the **Works Plans (Doc Ref. 2.3)** within which the Project can be carried out). The Order limits plan is provided as **ES Volume 3, Figure 1.2: Order Limits (Doc Ref. 5.3).** Land within the Order limits is known as the 'Site'.

1.5 Development Proposal

1.5.1 This AIA report has been completed in relation to the Project. In order to assess the impacts of the Project, the following plans have been utilised and/ or overlaid to produce the Vegetation Protection and Removal Plan:

- Topographic Survey derived from UAV Photogrammetry & Lidar Point Clouds S22213-00 Rev B dated January 2022 and Rev. C dated March 2024 by Sensat;
- **Illustrative Project Drawings – Not for Approval (Doc Ref. 2.6)**;
- **ES Volume 3, Figure 1.1: Site Location Plan (Doc Ref. 5.3);**
- **ES Volume 3, Figure 1.2: Order Limits (Doc Ref. 5.3);** and
- **Works Plans (Doc Ref. 2.3).**

1.6 Planning Policy & Guidance

National

1.6.1 The Project will be determined pursuant to section 104 of the Planning Act 2008 ('PA 2008'). On 17th January 2024, the Overarching National Policy Statement for Energy ('NPS EN-1'[2]), the National Policy Statement for Renewable Energy Infrastructure ('NPS EN-3'[3]) and the National Policy Statement for Electricity Networks Infrastructure ('NPS EN-5'[4]) came into force. These NPSs have effect in relation to the Application.

1.6.2 In relation to the Applicant's assessment NPS EN-1 states the following:

"5.11.27 Existing trees and woodlands should be retained wherever possible. In the EIP, the Government committed to increase the tree canopy and

woodland cover to 16.5% of total land area of England by 2050. The applicant should assess the impacts on, and loss of, all trees and woodlands within the project boundary and develop mitigation measures to minimise adverse impacts and any risk of net deforestation as a result of the scheme. Mitigation may include, but is not limited to, the use of buffers to enhance resilience, improvements to connectivity, and improved woodland management. Where woodland loss is unavoidable, compensation schemes will be required, and the long-term management and maintenance of newly planted trees should be secured."

1.6.3 NPS EN-3 also includes specific references to trees and states:

"2.10.100 The applicant should consider as part of the design, layout, construction, and future maintenance plans how to protect and retain, wherever possible, the growth of vegetation on site boundaries, as well as the growth of existing hedges, established vegetation, including mature trees within boundaries. Applicants should also consider opportunities for individual trees within the boundaries to grow on to maturity."

1.6.4 The National Planning Policy Framework[5] ('NPPF') seeks to ensure that new development is sustainable and underlines the importance of Green Infrastructure, of which trees form an integral part. This encompasses a recognition of the importance of trees in relation to the management of air, soil and water quality along with other associated ecosystem services and climate change adaption. The NPPF also seeks to achieve the protection and enhancement of landscapes and a net gain in biodiversity. Finally, it specifically identifies veteran and ancient trees and woodland as a highly valuable and irreplaceable habitat.

1.6.5 Local Planning Authorities ('LPA') in the UK have a statutory duty to consider both the protection and planting of trees when considering planning and development consent applications. The potential impact of development on all trees (including those not protected by a Tree Preservation Order or other statutory designation) is therefore a material consideration.

1.6.6 Planning Inspectorate Advice Note 15[6]: Good Practice Point 6 is relevant guidance to the Project.

Good Practice Point 6: '*Hedgerows affected by the Proposed Development should be identified in a Schedule to and on a plan accompanying the draft DCO. The Schedule and plan could also helpfully identify those hedgerows that are 'important' hedgerows (see Regulation 4 and Schedule 1 of The Hedgerows*

Regulations 1997 and section 97 of the Environment Act 1995). This would enable parties such as the relevant planning authority to make submissions on the appropriateness of including such provisions, and the ExA [Examining Authority] *to consider these.*

The draft DCO should also include a relevant Schedule and plan identifying the trees likely to be affected that are protected by TPOs and/ or are otherwise protected'.

Local

1.6.7 The Site is located within the administrative boundaries of ABC and KCC.

1.6.8 ABC's Local Plan[7] is considered relevant:

ABC Ashford Local Plan 2030 (adopted 2019)
Policy ENV3a – Landscape Character and Design

All proposals for development in the borough shall demonstrate particular regard to the following landscape characteristics, proportionately, according to the landscape significance of the site:

a) Landform, topography and natural patterns of drainage;

b) The pattern and composition of trees and woodlands;

c) The type and composition of wildlife habitats;

d) The pattern and composition of field boundaries;

e) The pattern and distribution of settlements, roads and footpaths;

f) The presence and pattern of historic landscape features;

g) The setting, scale, layout, design and detailing of vernacular buildings and other traditional man made features;

h) Any relevant guidance given in the Landscape Character SPD;

i) Existing features that are important to and contribute to the definition of the local landscape character shall be retained and incorporated into the proposed development; and,

j) Any non-designated, locally-identified, significant landscape features justified in a Parish Plan or equivalent document.

Policy ENV5 – Protecting Important Rural Features

All development in the rural areas of the Borough shall protect and, where possible, enhance the following features:

a) Ancient woodland and semi-natural woodland;

b) River corridors and tributaries;

c) Rural lanes which have a landscape, nature conservation or historic importance;

d) Public rights of way; and,

e) Other local historic or landscape features that help to distinguish the character of the local area'.

1.7 Best Practice Guidance

1.7.1 BS 5837 gives guidance on the level of information required in order to make an informed decision on the impact of development on trees. Undertaking a survey in accordance with the BS and the production of an Arboricultural Constraints Plan is the first stage in the context of the planning process, which is followed by an assessment of the arboricultural impacts arising from the development. When the development layout is fixed, the final stage is to specify how retained trees and hedgerows are to be protected during the development construction and also demolition/ decommissioning (where applicable).

1.7.2 The protection of existing trees and hedgerows during construction and decommissioning is secured within the **Outline CEMP (Doc Ref. 7.8) and Outline DEMP (Doc Ref 7.12)**. In line with the British Standard, an Arboricultural Survey has been undertaken and a Vegetation Protection and Removal Plan prepared to inform the development of the design for the Project. The results of this survey are described within this AIA.

1.8 Statutory Legal Protection

1.8.1 Legislation that affords a lesser or indirect level of protection to trees includes the following:

- The Wildlife & Countryside Act 1981[8];
- The Conservation of Habitats and Species Regulations 2017[9]; and
- Hedgerow Regulations 1997[10].

1.8.2 All of the above provide for the identification and safeguarding of flora and fauna that may be found in association with trees and woodlands.

1.9 Protected Species

1.9.1 Trees can contain features such as cavities, cracks, splits and loose bark which can offer potential habitat to species such as bats. Bats and their roosts are

protected under Schedule 5 of the Wildlife and Countryside Act 1981 as well as the Conservation of Habitats and Species Regulations 2017 and are also listed under Section 41 of the Natural Environment and Rural Communities Act 2006[11].

1.9.2 Trees provide potential nesting habitat for birds and all wild UK birds and their active nests are protected under the Wildlife and Countryside Act 1981. For bird species listed on Schedule ZA1 of The Act it is an offence to take, damage or destroy their nest(s), whether active or not.

2 THE SURVEY

2.1 Desk Study – Constraints

2.1.1 WA utilised ABC's online resource 'Planning Information Map Viewer'[12] on 13th February 2024 to ascertain whether any trees within and/or immediately adjacent to the Site are protected by Tree Preservation Orders ('TPO') and/or Conservation Area ('CA') status.

2.1.2 WA found that there are no trees protected by TPO or CAs present on or immediately adjacent to the Site at this time.

2.1.3 Trees that are subject to TPO protection are present in the vicinity of the Site, but not within the Order Limits. The nearest tree to the Order Limits is approximately 18.5m from the Site boundary, with the highway Calleywell Lane between the Site and the TPO protected tree. This tree's RPA does not extent within the Order Limits.

2.1.4 WA also conducted a search using the Woodland Trust's Ancient Tree Inventory[13] and DEFRA's Magic Map Application[14] on 13th February 2024 to ascertain whether any recorded veteran trees or ancient woodlands are located within influencing distance of the Site.

2.1.5 The Ancient Tree Inventory currently contains details of a recorded veteran field maple (ATI Ref. 173270) located on the Site's south-eastern boundary, but not within the Site. WA assumes that this tree is the field maple (T100), which has not been recorded as a veteran due to it not having sufficient veteran features to be classed as veteran tree. The Ancient Tree Inventory is a record of trees found by professionals and enthusiasts and submitted to the Woodland Trust for inclusion on the database. It is therefore not a complete record and cannot be used to rule out the presence of further veteran trees within and adjacent to the Site. WA identified a number of trees within and bordering the Site that have sufficient veteran features to be classed as veteran trees during the survey. These are listed in detail below:

Within the Site:

- T96, T186, G64, G70.

Bordering the Site:

- T57, T58, T59, T60, T62, T63, T91, G64.

2.1.6 DEFRA's Magic Map listed no ancient woodlands within the Site; however, there is an area of designated 'ancient, replanted woodland', Backhouse Wood, which is located adjacent to the south-east of the Site. This was referenced

during the survey as W5. There are also several listed ancient woodland sites within 500 m of the Site boundary, including Handen Wood and Poulton Wood to the south of the Site near Frith Road. These Ancient Woodlands will not be impacted by the Project.

2.1.7 The Forestry Commission was consulted as a Prescribed Body in accordance with the Section 42 of the PA 2008. Mitigation measures to avoid detrimental impacts are given in the 'Project Impact to retained trees' section of this report.

2.2 Field Survey

2.2.1 The arboricultural surveys were undertaken by Alan Reid between 21st February and 17th March 2022, between 28th and 29th November 2023 and between 9th and 10th January 2024 using the methodology set out in BS 5837 (see Appendices 2 and 3).

2.2.2 Weather conditions during the survey periods ranged from storm conditions and heavy rain to dry and sunny. The weather conditions did not hinder the survey.

2.2.3 The trees were surveyed in accordance with the methodology outlined in **Appendix 2**.

2.2.4 Each individual surveyed tree (T), tree group (G), woodland (W) and hedgerow (H) was given a sequential reference number.

2.2.5 The trees were then classified in accordance with the BS5837 tree quality assessment categories 'A', 'B', 'C' and 'U' (see category criteria and grading within **Appendix 3**). 'A' and 'B' category trees are considered as 'high' and 'moderate' quality, respectively, and are considered as a constraint to development. As such, these trees should be retained wherever possible and afforded appropriate protection during development. 'C' category trees are considered to be of 'lower' quality due to their condition or 'lower' amenity value and are, therefore not usually considered a constraint to development. 'U' category trees are those in such a 'poor' condition that they cannot usually be retained within the current Site context for longer than ten years. It should be noted that in some cases, category 'U' trees may have valuable habitat/ecological value despite being in poor arboricultural condition. In such cases, where it is safe to do so, these trees may be recommended for retention and/or pruning works. Where trees are located outside the Site boundary but within influencing distance, irrespective of their BS 5837 categorisation, these have been considered as a constraint during the design process and protected during construction and decommissioning, as such trees are not within the control of the Applicant.

2.2.6 Root Protection Areas (RPAs) are calculated for individual trees utilising the methodology set out in BS 5837, which is calculated by multiplying the stem diameter (measured at 1.5 m from ground level) by 12 for single-stemmed trees and a variant on this for multi-stemmed trees. For surveys in England (and outside England where it is a Local Planning Policy requirement), individual veteran trees are given a standard BS 5837 RPA and also a secondary veteran tree RPA, to accord with the Government's standing advice 'Ancient woodland, ancient trees and veteran trees: advice for making planning decisions'[15] and local planning policy, which is based on a calculation of fifteen times the stem diameter or five metres beyond the crown spread, whichever is greater.

2.2.7 For tree groups, woodlands and hedgerows, the calculated RPAs are based on a set distance from the canopy edge of the tree groups, woodlands and hedgerows. This calculation is based on the largest stem diameter of the trees on the edge of the tree groups and woodlands and the crown spread measurement for these edge trees. A variant of the tree group and woodland RPA calculation is used to calculate hedgerow RPAs, with the calculation based on the largest stem diameter of the hedgerow woody plants and the hedgerow width.

2.2.8 Further details for each tree, and the groups of trees surveyed are set out in the Tree Survey Schedule (see **Appendix 1.1 and Appendix 1.2**) and on the **Drawings (Appendix 9)**. These details accord with the methodologies and guidance set out in BS 5837.

3 SURVEY RESULTS AND EVALUATION

3.1 Introduction

3.1.1 The trees assessed and surveyed, which were located on and immediately adjacent to the Site, included three hundred and forty-six (346) individual trees, one hundred and seventy-five (175) tree groups, six (6) woodlands and sixty-two (62) hedgerows.

3.2 Tree Population – Site (Excluding the Sellindge substation area)

3.2.1 The trees assessed and surveyed in this area included two hundred and twenty (220) individual trees, one hundred and seventy-one (171) tree groups, six (6) woodlands and sixty-two (62) hedgerows.

3.2.2 The survey revealed that of the trees within the Site (excluding the Sellindge substation area), 27% of the individual tree population was classified as category 'A' quality, 22% as category 'B' quality, 44% as category 'C' quality and 7% as category 'U' quality. In addition, 12% of the woodland and tree groups surveyed were classified as category 'A' quality, 32% as category 'B' quality, 53% as category 'C' quality and 3% as category 'U' quality.

3.2.3 A detailed description of all trees and groups of trees surveyed within and immediately adjoining the Site (excluding the Sellindge substation area) and recommended works can be found in the Tree Survey Schedule in **Appendix 1.1**. **Tables 1** and **2** summarise the BS 5837 quality grading of the trees found, with these figures represented in graph format in **Figure 2** and **3**. Note, recommended works have been made in accordance with British Standard 3998: 2010 Tree Works – Recommendations[16] and/ or current industry best practice.

Table 1: Individual Trees Quality Assessment Summary

Tree quality	A	B	C	U
Individual Trees Identification	T8, T9, T10, T18, T19, T20, T26, T27, T28, T30, T32, T33, T34, T36, T37, T39, T40, T42, T47, T49, T50, T51, T52, T54, T55, T56, T57, T58, T59, T60, T61, T62, T63, T64, T70, T85, T91,	T6, T13, T15, T17, T21, T22, T23, T29, T31, T35, T44, T48, T65, T66, T77, T78, T82, T83, T87, T88, T89, T90, T106, T107, T125, T137, T138, T142, T149, T153, T157, T167,	T1, T3, T4, T7, T11, T12, T16, T24, T25, T38, T41, T43, T45, T46, T67, T68, T69, T71, T72, T75, T76, T79, T84, T86, T94, T95, T97, T99, T102, T104, T105, T108, T110, T111, T112, T113, T114,	T2, T5, T14, T53, T73, T74, T80, T81, T101, T109, T115, T148, T154, T155, T189

Table 1: Individual Trees Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
	T92, T93, T96, T98, T100, T103, T116, T126, T132, T133, T134, T136, T139, T141, T146, T164, T165, T186, T187, T190, T191, T205	T169, T170, T176, T178, T179, T183, T185, T188, T194, T195, T201, T202, T203, T204, T224, T227, T228	T117, T118, T119, T120, T121, T122, T123, T124, T127, T128, T129, T130, T131, T135, T140, T143, T144, T145, T147, T150, T151, T152, T156, T158, T159, T160, T161, T162, T163, T166, T168, T171, T172, T173, T174, T175, T177, T180, T181, T182, T184, T192, T193, T196, T197, T198, T199, T200, T206, T207, T223, T225, T226, T229, T230, T231, T232, T233, T234, T235	
Totals	**59**	**49**	**97**	**15**

Table 2: Tree Groups & Woodlands Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
Tree Groups and Woodland Identification	G7, G13, G14, G15, G17, G20, G21, G22, G25, G32, G34, G49, G64, G70, G89, G94, G121, W1, W2, W3, W5	G8, G10, G11, G12, G16, G19, G23, G24, G26, G29, G35, G37, G45, G46, G47, G48, G50, G53, G54, G56, G66, G82, G88, G92, G93, G95, G96, G97, G98, G100, G104, G108, G113, G119, G120, G123, G127, G128, G137, G139, G141, G144, G145, G150, G151, G156, G157, G158, G170, G172,	G1, G3, G4, G5, G6, G9, G18, G27, G28, G30, G31, G33, G36, G38, G39, G40, G41, G42, G43, G44, G51, G52, G55, G58, G59, G60, G61, G62, G63, G67, G68, G69, G71, G72, G73, G74, G76, G77, G78, G79, G80, G81, G83, G84, G85, G86, G87, G91, G99, G101, G102, G103, G105, G106, G107, G109, G110, G111,	G2, G57, G65, G75, G90

Table 2: Tree Groups & Woodlands Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
		G173, G174, W4, W6	G112, G114, G115, G116, G117, G118, G122, G124, G125, G126, G129, G130, G131, G132, G133, G134, G135, G136, G138, G140, G142, G143, G146, G147, G148, G149, G152, G153, G154, G155, G159, G160, G171	
Totals	**21**	**54**	**91**	**5**

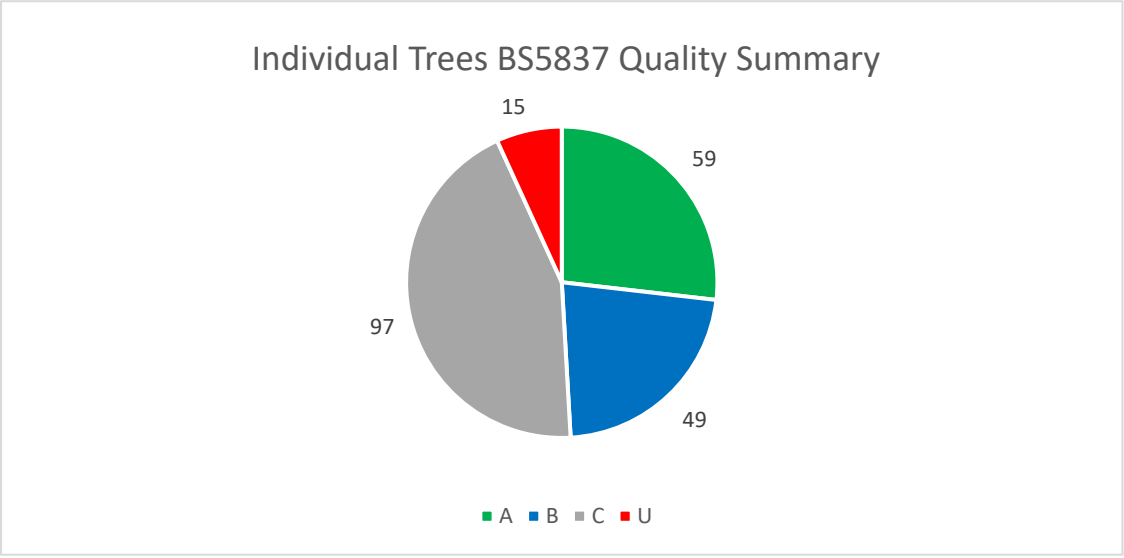


Figure 2: Overview of the BS 5837 quality of individual trees located on and immediately adjacent to the Site.

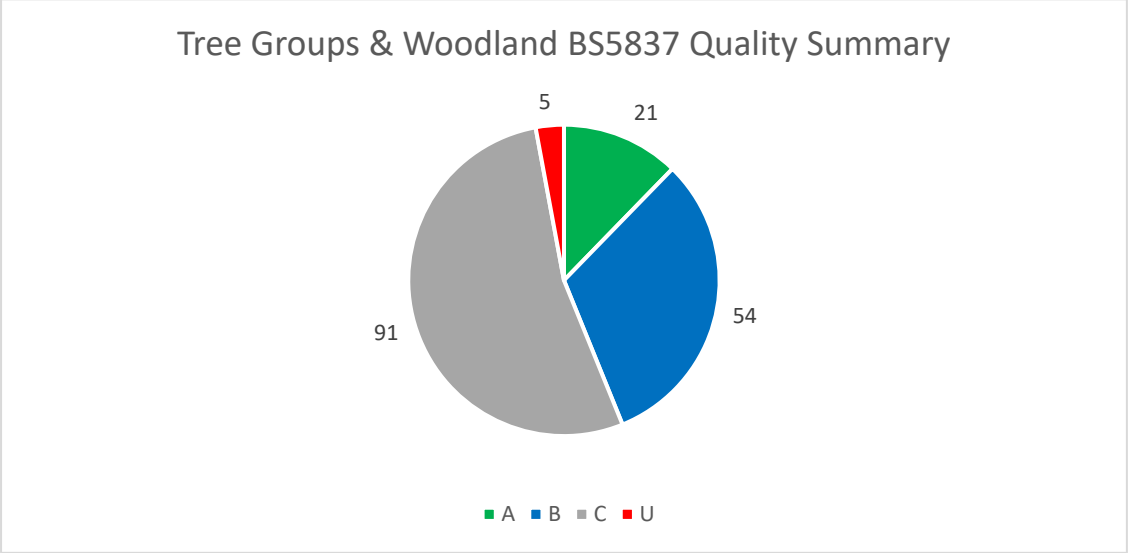


Figure 3: Overview of the BS 5837 quality of tree groups located on and immediately adjacent to the Site.

3.2.4 The surveyed hedgerows were not allocated a quality category, as BS 5837 does not include a methodology for the categorisation of hedgerows. However, the extent of the canopy spread and RPAs for hedgerows is shown on the **Drawings (Appendix 9)**.

3.2.5 An assessment of the age class of the individual tree population reveals that the population is predominantly made up of mature trees, with these accounting for 43% of the population. The remaining individual tree population is made of veteran trees accounting for 4% of the population, late-mature trees accounting for 1% of the population, early-mature trees accounting for 28% of the population, semi-mature trees accounting for 23% of the population and young trees accounting for 1% of the population. A summary of the age class assessment for individual trees is shown in the graph below in **Figure 4**.

Figure 4: Individual trees age class assessment summary.

3.3 Tree Population – Sellindge Substation area

3.3.1 The trees assessed and surveyed in this area included one hundred and twenty-six (126) individual trees and four (4) tree groups. No hedgerows or woodlands were identified in this part of the survey.

3.3.2 The survey revealed that, 49% of the individual trees were classified as category 'B' quality, 47% as category 'C' quality and 4% were classified as category 'U' quality. No category 'A' quality individual trees were found during the survey.

3.3.3 In addition, of the four tree groups surveyed, one (1) was classified as category 'B' quality and three (3) as category 'C' quality. No category 'A' quality or category 'U' quality tree groups were found during the survey.

3.3.4 A detailed description of all trees and groups of trees surveyed and recommended works can be found in the Tree Survey Schedule in **Appendix 1.2**. **Tables 3** and **4** below summarise the BS 5837 quality grading of the trees found, with these figures represented in graph format in **Figures 5 and 6**.

Table 3: Individual Trees Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
Individual Trees	None	T1, T2, T4, T5, T6, T7, T8, T9, T10, T16, T19,	T11, T12, T13, T14, T15, T18, T21, T24, T27,	T3, T17, T94, T117, T119

Table 3: Individual Trees Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
Identification		T20, T22, T23, T25, T26, T28, T31, T37, T39, T40, T42, T43, T46, T48, T50, T51, T53, T57, T58, T59, T60, T63, T64, T65, T66, T67, T68, T70, T71, T72, T74, T77, T78, T79, T86, T88, T89, T90, T99, T101, T102, T106, T107, T109, T110, T111, T113, T114, T116, T118, T126	T29, T30, T32, T33, T34, T35, T36, T38, T41, T44, T45, T47, T49, T52, T54, T55, T56, T61, T62, T69, T73, T75, T76, T80, T81, T82, T83, T84, T85, T87, T91, T92, T93, T95, T96, T97, T98, T100, T103, T104, T105, T108, T112, T115, T120, T121, T122, T123, T124, T125	
Totals	**0**	**62**	**59**	**5**

Table 4: Tree Groups Quality Assessment Summary				
Tree quality	**A**	**B**	**C**	**U**
Tree Groups Identification	None	G4	G1, G2, G3	None
Totals	**0**	**1**	**3**	**0**

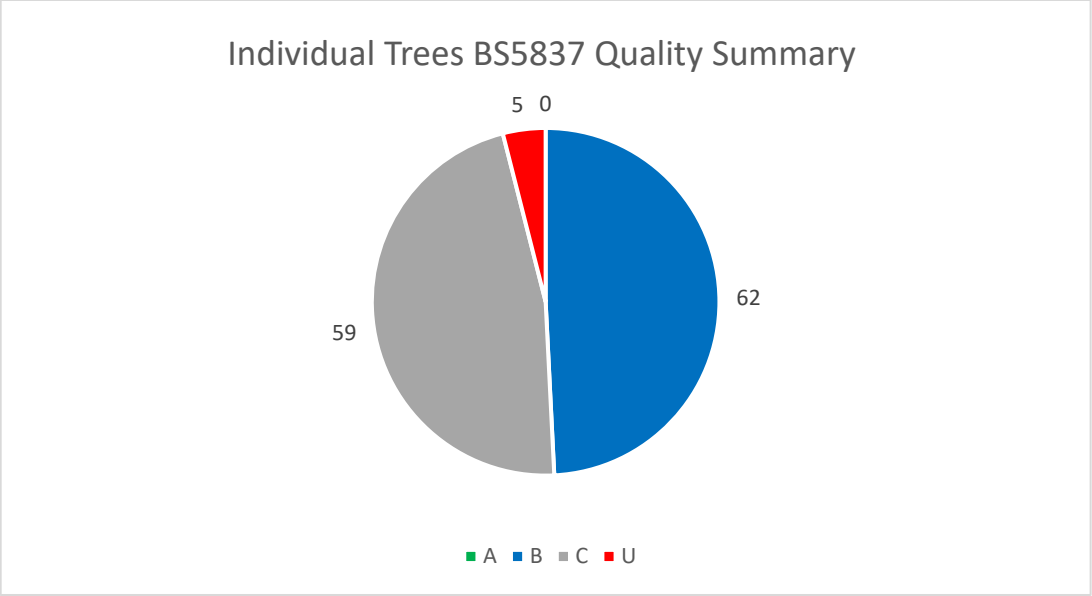


Figure 5: Overview of the BS 5837 quality of individual trees located on and immediately adjacent to the Site.

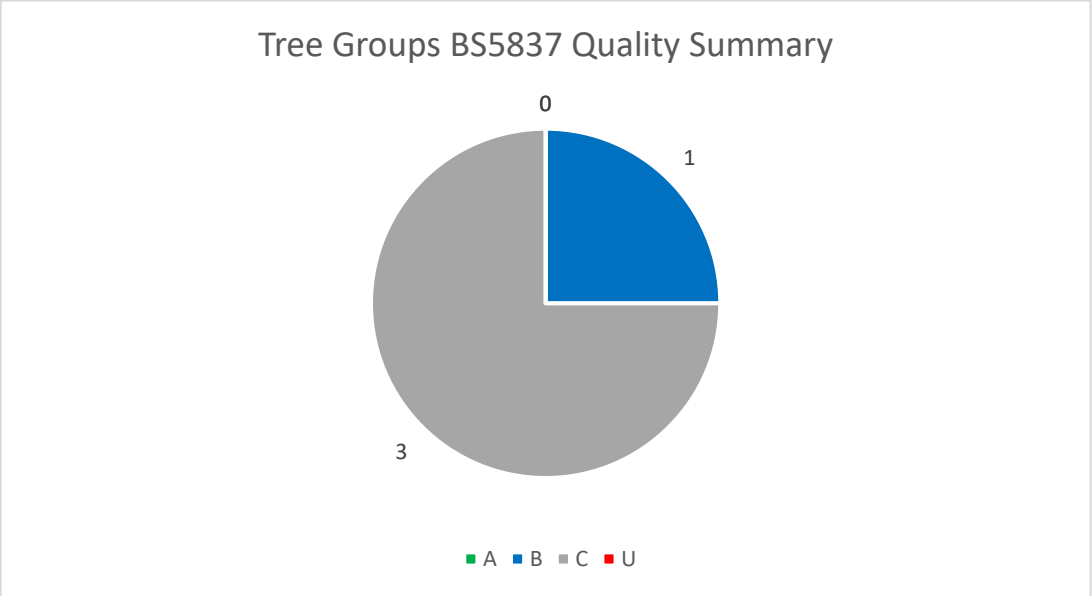


Figure 6: Overview of the BS 5837 quality of tree groups located on and immediately adjacent to the Site.

3.3.5 An assessment of the age class of the individual tree population reveals that the population is predominantly made up of early-mature trees, with these accounting for 46% of the population. The remaining individual tree population is made of semi-mature trees accounting for 31% of the population and mature trees accounting for 23% of the population. No young, late-mature or veteran trees were found. A summary of the age class assessment for individual trees is shown in the graph below in **Figure 7**.

Figure 7: Individual trees age class assessment summary.

4 PROJECT IMPACT TO RETAINED TREES

4.1.1 Implementation of the Project will necessitate the removal of two individual trees, six tree groups in full and the partial removal of trees from two groups. Small sections from fourteen hedgerows are to be permanently removed and small sections are to be removed from a further seven hedgerows, with these sections replanted when the construction of the Project is completed. An area of scrub approximately 245m² will also need to be removed for the formation of the platform and access track at Sellindge substation. Twelve individual trees and four tree groups are proposed for removal for safety & risk management reasons within the Site as detailed in full in **Table 5**.

4.1.2 In assessing the impacts of the Project on the trees on and adjacent to the Site and in proposing mitigation for these impacts, the DCO application accords with the requirements of BS 5837 and Local and National planning policies for trees and development.

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
As shown on the **Vegetation Protection and Removal Plan** Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 T4, T157, G1, G3, G4,	The removal of trees to facilitate the Project	Low Impact In order to facilitate the Project a small number of trees will require removal from within the Site, as detailed below and shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and the Vegetation Protection and Removal Plan GM12014 – 074 Version 01 accords with the methodologies and guidance set out in BS 5837: **Individual Trees** 'B' Quality: T157, 'C' Quality: T4. **Tree Groups** 'C' Quality: G1 (approximately 145m²), G3 (approximately 854m²), G4 (approximately 1,471m²), G24 (approximately 62m^2), G116 (approximately 100m²), G117 Part (approximately 161m²), G125 Part (approximately 38m²), G155 (approximately 213m²), G158 (approximately 90m²).	As part of the Project, new planting is to be undertaken within the Site area. This will improve the amenity local landscape and provide additional habitat for wildlife. Further details of this mitigation are provided in the **Outline LEMP (Doc Ref. 7.10)**.	B, C

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
G24, G116, G117 Part, G125 Part, G155, G158		The removals are all lower quality category 'C' quality trees, apart from one 'B' quality tree, a small category 'B' quality group and minor part removals of trees from two category 'B' quality groups and as such will have little, if any, impact on the visual amenity of the locality or the health and vitality of the retained trees.		
As shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o)	Pruning of trees to facilitate the Project.	<u>Low – Moderate Impact</u> The following pruning work is required to enable the Project: T39 ('A' quality): Crown raising over track to provide height clearance only if required; T54 ('A' quality): A proposed track is located within this tree's eastern crown and thus the tree's crown may need to be crown raised so that there are no obstructions to usage of the track. The height clearance over the track is not yet known, crown raising height will be specified at the	All tree pruning works are to be undertaken by a suitably qualified and insured tree work contractor, working in accordance with BS 3998:2010 – *Tree work. Recommendations* and industry best practice under the	**A, B**, C

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
Version 01 T39, T54, T207, T223, T225, G15, G17, G24, G119, G170, G171, W1		ArbMS stage. The crown raising could have a moderate impact on the tree if large diameter branches have to be removed; T207 ('C' quality): Northern crown to be laterally pruned back by up to 2.5m; T223 ('C' quality): Lateral side pruning on north-western side of tree by up to 0.7m and/ or crown raising to provide clearance over the proposed track; T225 ('C' quality): Crown raising over track to provide height clearance only if required; G15 ('A' quality): Lateral side pruning on north side of group by up to 2m and/ or crown raising to provide height and side clearance for the proposed track and fence installation; G17: ('A' quality): Lateral side pruning on south-eastern side of group by up to 2.5m and/ or crown raising to provide height and side clearance for the proposed track and fence installation;	supervision of an Arboricultural Clerk of Works. Pruning specifications to be confirmed at the ArbMS stage. Further details of this mitigation are provided in the **Outline LEMP (Doc Ref. 7.10)**.	

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
		G24 ('B' quality): Lateral pruning of northern crown spread by up to 2.8m to provide clearance from proposed solar array; G119 ('B' quality): The northern canopy to be either laterally side pruned back by up to 2m or to be crown raised over the access road; G170 ('B' quality): Crown raising over track to provide height clearance only if required; G171 ('C' quality): Crown raising over track to provide height clearance only if required; G173 ('B' quality): Side prune/ crown raise prune western edge of canopy by up to 2.8m to clear any encroaching branches over road and by up to 2.5m from edge of southern canopy back to clear access. Note, only to be done if required.W1 ('A' quality): Lateral side pruning of western crown by up to 2.5m and/ or crown raising to provide clearance from solar array to the west.		

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
		The proposed pruning of the trees will have little, if any, impact on the visual amenity of the locality and shouldn't have a long-term impact on the long-term health and vitality of the retained trees to be pruned.		
As shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 T2, T5,	Remove/manage trees for good risk management reasons in accordance with Appendix 1.1 and 1.2 of this report.	Low Impact Category 'U' trees and tree groups (T2, T5, T53, T101, T109, T115, T148, T155, T189, G2, G57, G65, G75) as shown on Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and trees (T94, T117, T119) as shown on the Vegetation Protection and Removal Plan GM12014 – 074 Version 01, the removal/management of these trees is for the objective of good arboricultural risk management. Note that the following Category 'U' trees and tree groups are located on or outside the Order limits; T14, T73, T74, T80, T81, T154 and G90 as shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 –	As part of the Project, new planting is to be undertaken within the Site area. This will improve the amenity local landscape and provide additional habitat for wildlife. Further details of this mitigation are provided in the **Outline LEMP (Doc Ref. 7.10)**.	U

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
T53, T101, T109, T115, T148, T155, T189, G2, G57, G65, G75, Shown on the Vegetation Protection and Removal Plan GM12014 – 074 Version		011 APFP CODE 5(2)(o) Version 01 and T17 as shown on the Vegetation Protection and Removal Plan GM12014 – 074 Version 01. These trees will not be removed as part of the Project. When construction commences, the applicant will liaise with the landowners of these trees with a view to addressing the risk to construction staff, the public and infrastructure potentially posed by these trees'.		

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
01 T94, T117, T119				
As shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 H4 Part, H5 Part,	Permanent removal of hedgerows to facilitate the Project	Low Impact The removal of small sections of hedgerow totalling up to 100m over the entire Site to facilitate the development will have little impact on the visual amenity of the area due to the small sections to be removed and limited visibility to the public, or the health and vitality of the retained sections of the hedgerows. These hedgerows are indicated on the **Vegetation Removal Plan (Doc Ref. 2.8)**.	All hedgerow removal works are to be undertaken by a suitably qualified and insured tree work contractor, working in accordance with BS3998:2010 – *Tree work. Recommendations* and industry best practice. As part of the Project, new planting is to be	**N/A**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
H6 Part, H10 Part, H11 Part, H13 Part, H22 Part, H25 Part, H28 Part, H33 Part, H34 Part, H49 Part, H51 Part, H54 Part			undertaken within the Site area. This will improve the amenity local landscape and provide additional habitat for wildlife. Further details of this mitigation are provided in the **Outline LEMP (Doc Ref. 7.10)**.	
H3 Part, H6 Part, H13 Part, H17 Part, H26 Part, H56 Part,	Temporary removal of hedgerow to facilitate the Project.	<u>Low Impact</u> The temporary removal of a hedgerow sections totalling up to 50m over the entire Site. These sections are to be replanted post-construction of the solar development. These removals have little if any impact on the long-term visual amenity of the location, the health and vitality of the	All temporary hedgerow removal works are to be undertaken by a suitably qualified and insured tree work	**N/A**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
H60 Part		retained parts of the hedgerows. These hedgerows are indicated on the **Vegetation Removal Plan (Doc Ref. 2.8)**.	contractor, working in accordance with BS3998:2010 – *Tree work. Recommendations* and industry best practice. The gaps created in the hedgerows will be replanted up as part of the proposed landscaping of the site once construction of the site is completed. Note, soil decompaction may be required prior to the replanting, if the soil	

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
			has become compacted. Further details of this mitigation are provided in the **Outline LEMP (Doc Ref. 7.10)**.	
As shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE	New permanent hard surfaces proposed within RPAs of retained trees	<u>Moderate Impact</u> As part of the Project, access from the public highway is required. **Illustrative Project Drawings - Not for Approval (Doc Ref. 2.5)** identifies an access from Station Road into Field 25 that is located within the RPA of the 'A' quality tree T164. Ground level reductions within RPAs to install tracks could lead to root severance and thus is considered a high impact. Typically no dig track construction would be	Trial trenching is likely to be required to investigate whether roots would be impacted and to specify the least damaging option for the track to join onto the highway. It is advised that this is	A

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
5(2)(o) <u>Version 01</u> T164		recommended to mitigate impacts. However, this may not be feasible within the RPA of tree T164 location due to the track having to marry into the existing highway level. Trial trenching utilising an airspade and Vac-Ex truck would be required to investigate whether roots are within the verge and what the impact of removing those roots would be.	addressed at the ArbMS stage. As explained in the **Outline CEMP (Doc Ref. 7.8)**, an ArbMS will be included within the detailed CEMP(s).	
As shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE	Development in proximity to veteran trees and ancient woodland	<u>Low Impact</u> Veteran trees and ancient woodland are irreplaceable from a landscape and habitat perspective and are afforded increased protection under the government Standing Advice '*Ancient woodland, ancient trees and veteran trees: advice for making planning decisions*'. All recorded veteran trees and ancient woodland on and adjacent to the Site are afforded buffer zones in accordance with the Standing Advice guidance.	A buffer zone of 15 times the stem diameter or 5m beyond the trees crown spreads (whichever is greater) for veteran trees and 15m from the canopy spread for ancient woodland is plotted on	**A**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
5(2)(o) Version 01 Within the Site: T96, T186, G64, G70 Bordering the Site: T57, T58, T59, T60, T62, T63, T91, W5		The Project will alter the land use within the Site, resulting in less disturbance of soils within veteran tree and ancient woodland buffer zones which will be beneficial to the rooting areas of the trees. Provided the recommended mitigation measures are followed, the Project will have a low impact on veteran trees and ancient woodland within and immediately adjacent to the Site.	the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01. These buffer zones will be protected by Site security fencing and/ or Heras Tree Protection Fencing as described in BS 5837:2012 – *Trees in relation to design, demolition and construction.* The Fencing will be erected prior to the	

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
			commencement of construction and will remain in place throughout the construction timeframe. Further details of this mitigation are provided in the **Outline CEMP (Doc Ref. 7.8)** and the **Outline LEMP (Doc Ref. 7.10)**.	
As shown on the Vegetation Protection	Incursion of RPAs into existing track.	<u>Low Impact</u> It is understood that the existing farm track will be used to access the Site as a fire access route. The concrete track surface will protect the underlying ground conditions and	None proposed.	**B**, **C**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 T223, T225, T226, G170, G171		RPA requiring no further protection measures. However, if the track is to be repaired or replaced details of the means of construction should be set out in an ArbMS.		
As shown on the Vegetation Protection and Removal	Construction/ Development within the RPAs of retained trees.	Low Impact Very minor incursions into the RPA's of retained trees and hedges for construction of the Illustrative Project Layout (Book 2: Illustrative Project Drawings - Not for Approval (Doc Ref. 2.6)), Works Plans (Doc Ref. 2.3) as listed	None proposed.	**A, B**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 T34, T48, G24, W1		below. Such minor incursions should not impact on the retained trees and hedges affecting their visual contribution to the locality or their health and vitality, T34 ('A' quality): A proposed inverter station encroaches within this tree's RPA by 6.7m², which is 1.8% of the tree's total RPA of 366m². This encroachment is negligible; T48 ('B' quality): A proposed inverter station encroaches within this tree's RPA by 3.1m², which is 0.8% of the tree's total RPA of 391m². This encroachment is negligible; G24 ('B' quality): A small area approximately 124m² is likely to be encroached upon when the solar array adjacent is installed. This area is approximately 9.5% of the total RPA area of 1,307m² and only affecting an area up to 2.5m wide, thus it is considered that the impact on the trees is as low as reasonably practicable; W1 ('A' quality): A small area approximately 87m² is likely to be encroached upon when the solar array adjacent is		

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
		installed. This area is approximately 1.1% of the total RPA area of 8,027m², thus it is considered that the impact on the trees is as low as reasonably practicable.		
As shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 T15, T16, T42,	Security fencing installed within the RPAs of retained trees.	Low Impact The proposed Site boundary security fencing (excluding the Project Substation and Sellindge Substation security fencing) will be surrounded by deer proof fencing secured with wooden posts. Wooden posts are located within the RPAs of the listed trees and tree groups.	Installation within the RPAs shall be completed utilising hand tools, under the supervision and direction of the Project Arboriculturist. Ground protection measures to be installed prior to the fencing works within RPAs with posts located to avoid significant roots.	**A, B, C**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
T47, T50, T55, T65, T70, T100, T106, T164, T165, G7, G15, G17, G22, G28, G79, W4			A method statement for the fence installation works within the trees' RPAs and veteran tree buffer zones can be detailed in an ArbMS for the Project. As explained in the **Outline CEMP (Doc Ref. 7.8)**, an ArbMS will be included within the detailed CEMP(s).	
As shown on the	Development in proximity to	<u>Low Impact</u> By its nature, a solar development seeks to avoid	Site security fencing and Heras Tree	**A, B, C, U**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and as shown on the Vegetation Protection and Removal Plan GM12014-	retained trees and hedgerows	structures that create shade, including trees and hedgerows. For this reason, the majority of the Project will have no impact on trees and hedgerows located within or immediately adjacent to the Site. Where there are impacts from the Project, these are described in this Table and recommendations are made to reduce the impacts to a tolerable level. The trees and hedgerows to be retained, will be protected with Site fencing supplemented with Heras Tree Protection Fencing as described in *BS 5837:2012 – Trees in relation to design, demolition and construction*, where required. Where there are natural existing barriers, such as fences to be retained and rivers/ditches, these will be utilised to protect retained trees and hedgerows. Where Site fencing is proposed around the solar fields,	Protection Fencing as shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and the Vegetation Protection and Removal Plan GM12014 – 074 Version 01 shall be installed in accordance with BS 5837 and prior to the commencement of the Project, including the installation of the	

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
074 Version 01 All retained trees and hedgerows		this can be utilised to protect retained trees and hedgerows during the construction of the Project, providing that it is installed prior to the Project construction commencing on Site, which includes the construction of the internal access track. Where the Site fencing doesn't protect the full RPAs of trees and hedgerows and/ or veteran tree and ancient woodland buffer zones, additional Heras fencing will need to be installed, in addition to the Site fencing, in order to ensure all retained trees RPAs and where applicable buffer zones are fully protected. The location of both the proposed Site security fencing and Heras Tree Protection Fencing are shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and the Vegetation Protection and Removal Plan GM12014 – 074 Version 01. These shall be installed prior to the installation of the solar PV Arrays, tracks and other associated infrastructure. Small changes to the location of	temporary internal haulage road, permanent hard standing, sub-stations, solar PV arrays and associated other infrastructure. The fencing shall be retained for the duration of the construction/ installation works. Further details of this mitigation are provided in the **Outline CEMP (Doc Ref. 7.8)**.	

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
		Site security fencing locations could reduce the amount of Heras Tree Protection Fencing required, which if enacted can be undertaken at the final design fix stage. With the Site fencing and Tree Protection Fencing in place, the Project will have a low impact on the trees and hedges within and outside the Site boundary that are immediately adjacent to the Site.		
As shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE	Area for biodiversity net-gain.	<u>Low Impact</u> These trees, groups, woodlands and hedgerows are either in, overhang or have part of their RPAs within Fields 28 and 29. They should not be affected by Project and the risk to them is considered low. Therefore, it is not considered appropriate to install Tree Protection Fencing to protect these trees and hedgerow. However, where there are trees in Fields 26 and 27 and to the east of these fields where the proposed electric cable	None Proposed.	**A**, **B**, **C**, **U**

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
5(2)(o) Version 01 T166, T167, T169, T170, T186, T187, T188, T189 G122, G123, G124, G135, G136, G137, G138, W5,		connection is to be located, the trees RPAs and crown spreads will be protected with Heras Tree Protection Fencing.		

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
W6, H55				
As shown on the Vegetation Protection and Removal Plan GM12014-074 Version 01 T90, T97, T98, T99, T101, T102	Sellindge Substation – pruning and scrub removal	Low Impact Refer to Appendix 1.2 and Vegetation Protection and Removal Plan GM12014-074 Version 01. To maintain the required clearance from the Sellindge Substation security fence, four category 'B' quality trees and two category 'C' quality trees may require pruning. This is to provide a separation distance of up to 2m from the security fence of the extended platform. A small amount of scrub will also require removal for the platform extension and a temporary access track from Sellindge Substation. Following the extension works, the access track will be allowed to return to scrub. The majority of the infrastructure required to connect the Project to Sellindge Substation is expected to be either	All pruning works are to be undertaken by a suitably qualified and insured tree work contractor, working in accordance with BS3998:2010 – *Tree work. Recommendations* and industry best practice. Further details of this mitigation are provided in the **Outline LEMP (Doc**	**B**, C

Table 5: Overview of Arboricultural Impacts and Proposed Mitigation				
Tree/ Group No.	**Proposed Works**	**Impact**	**Mitigation**	**BS 5837 Quality Categorisation**
		through existing ducts or is within the Sellindge Substation boundary. Therefore, the connection to the National Grid will have a very low impact on the trees adjacent to the Sellindge Substation. In the event that new ducts are required these will be located to minimise arboricultural impacts to the extent reasonably feasible.	**Ref. 7.10)**.	

5 SUMMARY AND RECOMMENDATIONS

5.1.1 The requirements of BS 5837 have been complied with in assessing the arboricultural impacts arising from the Project in this AIA.

5.1.2 WA accessed ABC's 'Planning Information Map Viewer' on 13th February 2024 to ascertain whether any trees within or immediately adjacent to the Site are subject to a Tree Preservation Order or within a Conservation Area. Neither of these statutory designations are present. On the 13th February 2024 a review of the DEFRA 'Magic' online mapping showed that an area of Ancient Woodland, known as Backhouse Wood, is located to the south of Fields 28 and 29 and the Order limits, in the north-eastern part of the Site. This designation affords the woodland greater protection in accordance with the Government's standing advice '*Ancient woodland, ancient trees and veteran trees: advice for making planning decisions'*, including a 15m minimum buffer from the edge of the woodlands canopy. This buffer zone is shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and no development is to take place within the Ancient Woodland or its buffer zone as secured by the **Design Principles (Doc Ref. 7.5)**. It should be noted that a further three areas of Ancient Woodland are located within 500m of the Site boundary. The nearest of these, Handen Wood, is located to the south of the Site, near Frith Road. These Ancient Woodlands will not be impacted by the Project.

5.1.3 During the survey, a number of veteran/ ancient trees were identified. These trees are listed below and are afforded a buffer zone of 15 times their stem diameter or 5 metres beyond their crown spread, whichever is greater. These buffer zones are shown on the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and are secured by the **Design Principles (Doc Ref. 7.5)**:

Veteran Trees Within the Site:

- T96, T186, G64, G70.

Veteran Trees Bordering the Site:

- T57, T58, T59, T60, T62, T63, T91, G64.

5.1.4 These veteran/ ancient trees are concentrated mainly in two areas of the Site. A number of historic willow pollards are present on the northern and north-western boundaries of Field 16; and several ancient field maples and further historic willow pollards are to the east of Field 20 and south of Field 22, to the south-east of the Site. There is one exception to this, an ancient field maple

(T186) is located to the south-east of Field 29, adjacent to the area of Ancient Woodland mentioned above.

5.1.5 In summary, implementation of the Project will necessitate the removal of two individual trees, six tree groups in full and the partial removal of trees from two groups. Small sections from fourteen hedgerows are to be permanently removed and small sections are to be removed from a further seven hedgerows, with these sections replanted when the construction of the Project is completed. The total extent of impacted hedgerows will be no more than 150m as secured in the **Design Principles (Doc Ref 7.5).** An area of scrub approximately 245m² will also need to be removed for the formation of the platform and access track at Sellindge Substation.

5.1.6 Twelve individual trees and four tree groups are proposed for removal for safety & risk management reasons within the Site.

5.1.7 The tree removals are all lower quality category 'C' quality trees, apart from one 'B' quality tree, a small category 'B' quality group and minor part removals of trees from two category 'B' groups and as such will have little, if any, impact on the visual amenity of the locality.

5.1.8 As part of the Project, access from the public highway is required. **Illustrative Project Drawings - Not for Approval (Doc Ref. 2.65)** identifies an access from Station Road into Field 25 that is within proximity of the RPA of T164. Trial trenching utilising an Airspade and Vac-Ex truck would be required to investigate whether roots are within the verge and what the impact of removing those roots would be. It is recommended that this is specified in an ArbMS.

5.1.9 Pruning will be required to be undertaken to a number of trees. Provided the pruning is undertaken by a qualified arborist (Tree Surgeon) working in accordance with BS 3998: 2010, the impact on the trees will be minimised.

5.1.10 Site security fencing is proposed within the RPAs of a number of retained trees. The installation of the fencing will need to be undertaken under the supervision and direction of the Project Arboriculturist using hand tools to minimise damage to the rooting environment of the trees. Temporary ground protection measures may also be required to be utilised. It is recommended that this is specified in an ArbMS.

5.1.11 The trees and hedgerows that are to be retained on the Site will be protected during the proposed works predominantly with Site security fencing, augmented with Heras Tree Protection Fencing. Unless otherwise stated in an ArbMS, the protective fencing will be comprised of the proposed Site boundary fencing,

supplemented with Heras Tree Protection Fencing as described in BS 5837 Figure 3a. An example of this is included at **Appendix 6**, with the location of both types of the protective fencing shown on the Vegetation Protection and Removal Site Overview Plan Ref. GM12014 – 010 APFP CODE 5(2)(o) Version 01, the Vegetation Protection and Removal Plan Sheets 1-8 Ref. GM12014 – 011 APFP CODE 5(2)(o) Version 01 and the Vegetation Protection and Removal Plan GM12014 – 074 Version 01 accords with the methodologies and guidance set out in BS 5837. Signage on the Tree Protection Fencing will also be required to be installed at 10 m intervals and an example of this is included at **Appendix 7**.

5.1.12 An ArbMS is advised to be completed when the Project design is fixed to ensure tree and hedgerow protection measures are fully specified and implemented. The requirement to provide an ArbMS is secured via the **Outline CEMP (Doc Ref. 7.8)** and **Outline DEMP (Doc Ref. 7.12)**. The Requirements of the **Draft Development Consent Order (Doc Ref. 3.1**) secure that a CEMP for each phase of the authorised development must be in accordance with the Outline CEMP and that a DEMP for any part of the authorised development must be in accordance with the Outline DEMP.

5.1.13 Overall, the Project will have a low impact on the trees and hedgerows on the Site and it is likely that the change from agricultural activity will improve the growing conditions of many trees, including the adjacent ancient woodland and veteran/ ancient trees. The Project also includes significant additional tree and hedgerow planting which will mitigate the limited loss of trees and hedges on the Site.

Appendix 1.1
Tree Survey Schedule – Main Solar Array Site

Appendix 1.2

Tree Survey Schedule – Sellindge Substation

Appendix 2
Survey Methodology

Appendix 2: Survey Methodology

The following process has been followed and the features of each tree, group of trees or woodland have been recorded in the Arboricultural Data Sheets (See Appendix 1):

- Each individual surveyed tree (T), tree group (G), woodland (W) and hedgerow (H) was given a sequential reference number.
- Where a number of surveyed trees formed a cohesive feature, such as groups, woodland compartments or whole woodlands, they were recorded, assessed and plotted as groups (G) or as woodland (W). Whilst not every tree within groups surveyed, a representative sample of the largest edge trees were measured in order to be able to plot the group or woodlands crown spreads and RPAs. Where detailed plans show development proposed within a group or woodland, all trees within influencing distance of the development proposals are usually recorded, plotted and assessed.
- The surveyed trees and hedgerows were then identified by their common and/ or Latin name.
- Tree height measured in metres from the stem base using a Truepulse 200L laser. Where the ground has a significant slope, the higher ground is selected. This informs crown/stem ratio and shading.
- Crown height/ height of lowest branches is measured in metres above ground level using a Truepulse 200L laser and is an indication of the average height at which the main crown begins.
- Stem diameter is measured in millimetres at 1.5m above the adjacent ground level (upslope on sloping ground) with a standard diameter measuring tape to enable RPAs to be calculated.
- Crown spread is measured in metres using a Truepulse 200L laser and taken at the four-cardinal compass points to derive an accurate representation of the crown to be plotted on the TPP.
- Age class of the tree is described as:
    - Young – Newly planted trees and self-seeded trees;
    - Semi-mature – Large nursery stock that can be newly planted or self-seeded trees still in the early stages of establishment;
    - Early mature – Trees in the first third of their life cycle which is characterised by their quickness of growth and subsequently significant increase in size;

  - Mature – Trees in the second third of their life cycle, characterised by reaching their ultimate size and slowing of annual incremental growth;
  - Late mature – Trees in the final third of their life cycle, often characterised by showing signs of decline; and
  - Veteran – Trees that show ancient tree characteristics irrespective of their age, such as crown retrenchment and decaying wood habitat.

- Physiological condition is assessed and classed as G (good), F (fair), P (poor) or D (dead). This is an indication of the health of the tree and takes into account vitality, presence of disease and dieback.
- Structural condition is assessed and classed as G (good), F (fair) or P (poor). This is an indication of the structural integrity of the tree and takes into account significant wounds, decay and quality of branch junctions.
- Life expectancy is classed as: less than 10 years (<10), at least 10 years (10+), at least twenty years (20+) or at least 40 years (40+). This is an indication of the number of years before the removal of the tree is likely to be required.
- The trees were then classified in accordance with the BS5837:2012 tree quality assessment categories ‘A’, ‘B’, ‘C’ and ‘U’ (see category criteria and grading within Appendix 3).
- Comments include a brief description of the tree with comments on the form, vitality, health and any significant defects that may be present.
- Recommendations for work are based on the existing land use.

Appendix 3
Tree Categorisation Method

Appendix 3: Tree Categorisation Method

Table 1 **Cascade chart for tree quality assessment**

Category and definition	Criteria (including subcategories where appropriate)			Identification on plan
Trees unsuitable for retention (see Note)				
Category U Those in such a condition that they cannot realistically be retained as living trees in the context of the current land use for longer than 10 years	• Trees that have a serious, irremediable, structural defect, such that their early loss is expected due to collapse, including those that will become unviable after removal of other category U trees (e.g. where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees nearby, or very low quality trees suppressing adjacent trees of better quality *NOTE Category U trees can have existing or potential conservation value which it might be desirable to preserve; see **4.5.7**.*			See Table 2
	1 Mainly arboricultural qualities	**2 Mainly landscape qualities**	**3 Mainly cultural values, including conservation**	
Trees to be considered for retention				
Category A **Trees of high quality** with an estimated remaining life expectancy of at least 40 years	Trees that are particularly good examples of their species, especially if rare or unusual; or those that are essential components of groups or formal or semi-formal arboricultural features (e.g. the dominant and/or principal trees within an avenue)	Trees, groups or woodlands of particular visual importance as arboricultural and/or landscape features	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (e.g. veteran trees or wood-pasture)	See Table 2
Category B **Trees of moderate quality** with an estimated remaining life expectancy of at least 20 years	Trees that might be included in category A, but are downgraded because of impaired condition (e.g. presence of significant though remediable defects, including unsympathetic past management and storm damage), such that they are unlikely to be suitable for retention for beyond 40 years; or trees lacking the special quality necessary to merit the category A designation	Trees present in numbers, usually growing as groups or woodlands, such that they attract a higher collective rating than they might as individuals; or trees occurring as collectives but situated so as to make little visual contribution to the wider locality	Trees with material conservation or other cultural value	See Table 2
Category C **Trees of low quality** with an estimated remaining life expectancy of at least 10 years, or young trees with a stem diameter below 150 mm	Unremarkable trees of very limited merit or such impaired condition that they do not qualify in higher categories	Trees present in groups or woodlands, but without this conferring on them significantly greater collective landscape value; and/or trees offering low or only temporary/transient landscape benefits	Trees with no material conservation or other cultural value	See Table 2

A single tree, group or woodland can come under one or more sub-headings. This does not confer on it a higher value than a tree with a single value.

Appendix 4
General Tree Constraints

Appendix 4: General Tree Constraints

- Trees impose a constraint to development in a variety of ways. These principally include their rooting areas, referred to as Root Protection Areas (RPAs), their current and future crown spread, and their species characteristics (e.g. branch and fruit drop, production of 'honey dew', density of foliage etc). Where located on shrinkable clay soils, trees can also contribute to subsidence damage to buildings.
- Consideration should be given during the design stage to any incompatibilities between the design and tree retention. These include (but are not limited to) the effects on the amenity value provided by existing trees, working space required during construction, infrastructure/ utility requirements, highway visibility requirements and foundation design to prevent the effects of subsidence.
- The RPA is calculated using the tree's diameter at 1.5m and represents the minimum area which should be left undisturbed around each retained tree to enable its survival following development.
- Tree root morphology is influenced by many factors including, but not limited to; past land use, the presence of roads, structures and underground services, drainage and soils. Any of these factors may result in non-uniform root growth and therefore result in an RPA represented as a polygon RPA that reflects suitable protection of the root system.
- The majority of tree roots are generally found within the top 600mm of soil, depending on soil types and profiles. Any disturbance or sudden changes to the rooting environment can result in damage being caused to roots and alterations to the roots physiological ability to absorb water, nutrients and undertake gaseous exchange.
- Where alterations have been made within the trees' rooting environment, the damage can often be observed within the crown of the trees, reduced vitality and increased deadwood production. Trees are likely to decline progressively, or in some circumstances may become a hazard where stability and structural integrity has been compromised by Site operations.
- The RPA must be protected by the installation of tree protection fencing prior to the commencement of development work on Site. The fencing provides a physical barrier that is secured, to prohibit activities considered detrimental to the retention of healthy trees (e.g. excavations, soil stripping, discharge of substances harmful to trees, storage of materials, fires). In addition to this, it may be necessary to install specialist temporary ground protection which enables access within the RPA, without causing long-term detriment to the health of the tree(s).

- No traditional construction works should take place within the RPA of retained trees. However, in some circumstances and where there is an overriding requirement for construction and the retention of trees, it may be appropriate to employ techniques and use materials that allow trees to be retained, whilst enabling the construction. For hard surfacing, such as drives, roads and footways, utilising no-dig construction techniques and using three-dimensional geogrids and permeable wearing course materials may be appropriate. For built structures within RPAs, the use of pile and above ground level beam foundations and/ or cantilevered engineering solutions can enable structures to be constructed within RPAs. The project arboriculturist should be consulted on the appropriateness of building within retained tree RPAs, as this is not appropriate for all trees and soil types.
- Where aerial parts of the tree crowns extend beyond the edge of the RPA, consideration should be given to protection of these parts, allowing for protection during development processes including working space. It may be appropriate to consider pruning of aerial parts to allow construction clearances and future nuisance abatement, this however must be considered by the project arboriculturist and the LPA. Where development proposals identify a need for working within the RPA/ crown spread of retained trees and it can be demonstrated that retained trees remain viable, then it is important that the project arboriculturist is contacted to advise and prepare an ArbMS and identify appropriate stages of supervision.

Appendix 5
Report Limitations

Appendix 5: Report Limitations

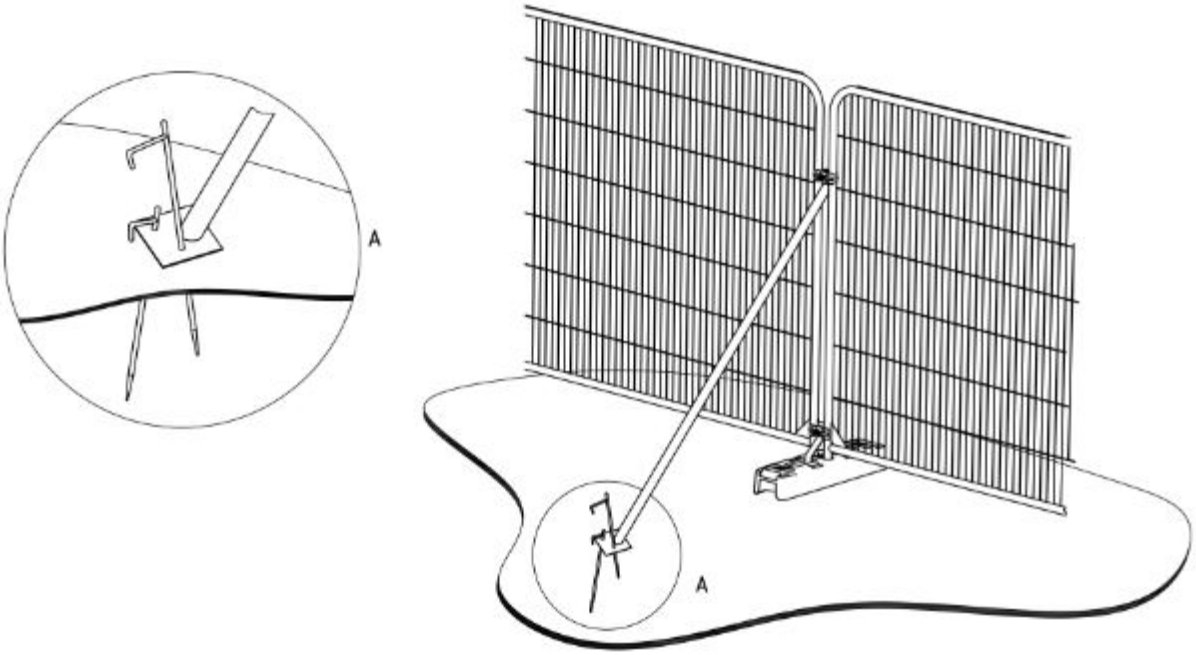
- Trees are influenced by a variety of environmental variables, which can affect the health of trees causing biomechanical and physiological changes. All comments made on tree health reflects their physical condition at the time of the survey. Due to the changeable nature of trees and other site/ environmental conditions, which may influence trees, the preliminary management recommendations/ further works for the surveyed trees undertaken, which can be found in Appendix 1.1 and 1.2 of this report, are only valid for a period of 12 months from the date of the Site survey (e.g. 17th March 2022, 29th November 2023 and the 10th January 2024). However, these recommendations relate specifically to the general maintenance of tree health and safety and do not affect the results and implications of this Arboricultural Impact Assessment, as the results of the survey remain valid for the purposes of the DCO application. Note that it is recommended that the validity of the survey data is reviewed to ensure it is still fit for purpose as part of the final design process.
- This AIA report and the associated **Drawings (Appendix 9)** are based on a topographical survey plan supplied by the Applicant. Where tree stem locations are not shown on the topographical survey, these are plotted using GPS plotting and/ or the utilisation of site features to manually plot the tree stem locations and canopy spreads for tree groups. Aerial photography is also utilised to plot tree group canopy spreads, where utilisation of GPS is not feasible. These methods provide a good representation of the surveyed trees; however, please note that the GPS used is not sub-metre accurate.
- Although comments and recommendations on the safety of particular trees may have been made, this survey is not a Tree Risk Management Survey and thus should not be treated as such. All trees were surveyed from ground level only and in a solely visual nature. However, where trees have been identified as presenting an imminent safety risk due to structural defects, this has been brought to the attention of the Applicant and treated as a separate matter. Should trees require further detailed assessment (decay detection, aerial inspections) and do not present an imminent safety risk, the information will be detailed within the survey schedules.
- Any management recommendations have been made in accordance with BS3998: 2010 Tree Works – Recommendations; and/ or industry best practice. Works have been recommended in accordance with any statutory obligations on the landowners or occupiers.

- This survey did not include an ecological survey of vegetation or habitat areas. Any ecological issues incidentally observed during the survey are reported on in the tree schedule.
- For the purpose of this report no samples were obtained from Site for analysis or any other reason.
- The survey did not include soil sampling to determine whether the soil is shrinkable.

Appendix 6
Tree Protection Fencing

Appendix 6: Tree Protection Fencing

BS 5837 Figure 3



a) Stabilizer strut with base plate secured with ground pins

Appendix 7
Tree Protection Signage

Appendix 7: Tree Protection Signage

Appendix 8
Glossary of Common Terms Used in Arboriculture

Appendix 8: Glossary of Common Terms Used in Arboriculture

Arboricultural Method Statement (ArbMS). A methodology for the implementation of development where encroachment within the RPA has the potential to cause damage or loss of retained trees.
Arboriculturist. Someone who through relevant training and experience has gained knowledge in the expertise of trees.
Ancient: A tree that has passed beyond maturity and is old, or aged, in comparison with other trees of the same species.
Crown/Canopy. The parts of the tree that supports the leaves.
Deadwood. Non-functional branches which no longer support natural growing conditions of the tree but may be beneficial for the support of habitats and species, possibly including rare saproxylic invertebrates. Thus, may also be referred to as 'Decaying Wood Habitat' or 'Dysfunctional wood'. Size ranges for deadwood referred to in this report and/or Appendix 1: - Small (<75 mm diameter), Medium (76 – 150 mm), Large (151-300) mm and Very large >301 mm. For some species such as oak etc, the risk of deadwood falling from the tree can be lesser than for other species, due to the variety of wood strengths of different tree species.
Defect. Any area of the tree that no longer has an optimal mechanical uniformity of stress. Defects may or may not affect the long-term retention of the tree(s), depending upon severity, the likelihood of the defect(s) failing and the location of the tree(s) (Target).
Dieback. Death of woody parts of the tree starting at distal parts of the tree's crown.
Disease. Damage occurring to living organisms as a result of pathenogenic micro-organisms.
Physiological Condition. An indication of the health and vitality of a tree.
Pollarding/ Re-pollarding. The removal of the tree's crown back to a framework of branches or the stem to where new growth develops and is removed cyclically. First undertaken on young trees, then on a pollard cycle. Note, a good proportion of veteran and ancient trees are pollarded trees.
Pruning. Selective removal of parts of the tree to achieve a desired outcome.
Root Protection Area (RPA). An area around a tree identified by multiplying the stem diameter at 1.5 m from ground level by 12 to produce a radial area or rooting volume around a tree to be protected Ref. BS 5837.
Services. Any above and below ground structure or apparatus for utility provision.
Stem(s). The main structure from the ground up supporting the crown.
Structure. A manufactured object, such as building, roads, path, wall or excavated structures.

Vegetation Protection and Removal Plan. A scaled drawing informed by descriptive text where necessary, based upon finalised Site proposals, showing trees and hedgerows for removal and for retention and illustrating the tree and landscape protection measures to be installed prior to development commencing. This term is synonymous with Tree Protection Plan.
Veteran Tree. Tree that, by recognized criteria, has features conducive for wildlife and biodiversity especially habitat for important saproxylic invertebrates and fungi, exhibiting features of biological, cultural and/ or aesthetic characteristics of, but not exclusive to trees surviving beyond the typical age range for the species concerned.

DRAWINGS

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